On December 11, 2019, the European Commission released a communication outlining a blueprint for a “European Green Deal”. To clarify its scope and limits, this Policy brief offers a critical examination of the main concepts that underpin and frame it: carbon neutrality, decoupling, resource efficiency, inclusive growth and just transition.

This review leads to five recommendations for European authorities with a view to improving the relevance and consistency of the “Green Deal”:

■ Begin now a review of the complementarity and the adequacy to current objectives of EU’s climate mitigation instruments (regulations, EU ETS, carbon taxation), revise them if necessary and then set the new EU climate targets;

■ Aim for a net decoupling (taking greenhouse gas consumption emissions, not production emissions, as a reference) and promote on this basis and other equity criteria a new global collective climate justice strategy – understood as the fair distribution of mitigation efforts – with a view to giving substance to the Paris Agreement (2015) when it is revised at COP 26 in Glasgow in November 2020;

■ Aim for a reduction in the consumption of natural resources taking into account the global material footprint of the European Union and begin now a reflection on the compatibility of this reduction in volumes consumed and extracted and the acceleration of the digital transition on the continent;

■ Define as a benchmark for the decoupling promoted by the “Green Deal” a set of human well-being indicators rather than just GDP and entrust the European Parliament with the responsibility of rethinking the European semester by defining the dimensions of European well-being to be improved, the corresponding indicators and their articulation with the Sustainable Development Goals of the United Nations and the Stability and Growth Pact;

■ Broaden the concept of “just transition” to define and implement a real strategy for combating environmental inequalities in the European Union, drawing in particular on the work of the European Environment Agency on this issue.
In March 1933, the newly elected President of the United States Franklin Delano Roosevelt propelled his country into an unprecedented program of economic regulation, social protection and public investment. From this “first New Deal”, Roosevelt was mindful of the need to articulate the imperative of social progress to the emerging challenge of environmental protection: the creation of the Civilian Conservation Corps (CCC) — which would provide from 1933 to 1942 a “green job” (forests, dams, etc.) to a total of 3 million unemployed — was among the very first measures of the new administration.

This social and ecological nexus is the core of the bill for a “Green New Deal” presented in February 2019 by Alexandria Ocasio-Cortez and her colleagues in the US House of Representatives. Rejected by the Republican Senate without examination, the “Green New Deal” identifies as a fundamental cause of the American democratic malaise “systemic injustices” (social and ecological) and assigns to the federal government the “duty” to implement, in order to mitigate them, a transition “promoting justice and equity” in priority for the benefit of “frontline and vulnerable communities”.

The European Commission communication published on December 11, 2019 has taken a different approach. It defines from the onset the Green Deal as a “new growth strategy” for the continent and mobilizes to give it flesh concepts and instruments which mainly aim at economic efficiency and marginally social justice while attempting to make credible the overall goal of “becoming the world’s first climate-neutral continent by 2050”.

The early comments on the European project have underlined, for the most favorable, the ambitious nature of the objectives and, for the most critical, the insufficient amounts committed to achieve them. This Policy brief offers another insight into the Green Deal project, by critically examining the main concepts that underpin and frame it: carbon neutrality, decoupling, resource efficiency, inclusive growth and just transition.

The ambition of the new European Commission, which has made the “Green Deal” its founding act, deserves to be praised for two reasons: it breaks with the ecological wait-and-see attitude of the previous Commission and it reaffirms the environmental purpose on the world stage of the European Union, which was overlooked if not lost during the 2010 decade. But precisely because of this withdrawal, the urgency is today greater and the requirement level of significant action higher, because ecological crises have only accelerated during this time. What is more, the European Union has already, in the recent past, wanted to adopt a medium-term strategy. In 2000, the Lisbon strategy aimed to make Europe “the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion”.

Two major shortcomings of this strategy were then identified (Creel et al., 2005) and largely explain, in retrospect, its failure: the inconsistency of the objectives and the inadequacy of the instruments to the objectives.

If these two pitfalls are to be avoided, we must closely examine the solidity of the architecture of the new European strategy while it is still under construction and therefore still amendable: each of the five criticisms of this Policy Brief is therefore accompanied by a constructive recommendation to European authorities.

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2. Tellingly, the word “inequality” is absent from the text.

1. More “ambitious” but more unlikely climate targets

The concept of “carbon neutrality” introduced by the IPCC to consolidate its most optimistic scenarios, is written out in full in Article 4.1 of the Paris Agreement (2015):

*In order to achieve the long-term temperature goal set out in Article 2, Parties aim to... achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.*

By 2050 at the earliest, the goal is to ensure that greenhouse gas (GHG) emissions from human activities (combustion of fossil fuels and deforestation) do not exceed the capacity of absorption of natural and artificial carbon sinks. Today, human-made CO₂ emissions, which 86% come from the combustion of fossil fuels and 14% from deforestation, are only absorbed for 29% by forests and 23% by seas and oceans, which are natural carbon sinks, the rest, 48% of emissions, fueling the greenhouse effect by settling in the lower layers of the atmosphere.³

This objective of carbon neutrality poses all kinds of methodological problems: the perimeter of the gases considered, the use of yet untested technologies of artificial sinks, the more or less realistic compensation between reduction of emissions and increase of absorption capacities, etc. But above all, as it appears in the Green Deal, this objective is neither really new nor fully credible.

As a signatory to the Paris Agreement, the European Union has already, in practice, subscribed to carbon neutrality in 2050 and several of its member states have already explicitly included it in their national climate strategy (France for instance). The novelty is that it aims at achieving carbon neutrality “by 2050” (i.e. in 2050 at the latest), a goal which will inform the first concrete measure of the Green Deal: the adoption in March 2020 of an unprecedented “European Climate Law”.

Assuming that the forthcoming text effectively enshrines in European law the objective of “no net emissions of greenhouse gases in 2050” for EU countries considered together, it would in any case be necessary to speed up present efforts of emissions reduction (in order to avoid unreasonably betting at the end of the period on the increase in absorption capacities to achieve, in total, carbon neutrality).

But here, ambiguity prevails. Admittedly, the Commission indicates that it wants to “to increase the EU’s greenhouse gas emission reductions target for 2030 to at least 50% and towards 55% compared with 1990 levels in a responsible way” (leaving readers in the dark as to what “responsible” means in this context). The goal is to build a more coherent emission reduction trajectory than today, by putting more emphasis on the efforts to be made during the 2020-2030 decade (the Commission having resisted demands to adopt a 65% reduction target for 2030). However, according to the latest projections from the European Environment Agency (December 2019), the current target of 40% reduction by 2030 will most likely not be reached. In other words, the European Union raises its climate targets not only out of virtue but obligation: the less the objectives are achieved in the short term, the more it is necessary to raise medium term objectives in order to keep the hope to achieve the long term objectives alive.

To assess the magnitude of the proposed effort, let’s look at retrospective and prospective data: between 1990 and 2008, European emissions fell by 11%, then by 15% between 2008 and 2017, but half of this decrease was acquired between 2008 and 2009 from the “great recession”. In short, the Green Deal proposes to bring the annual rate of emission reduction, of the order of 0.7% per year for 25 years outside recession periods, to approximately 4.3% per year from 2020 and until 2050. To evaluate the credibility of this ambition, we can draw two climate paths for the EU with 2020, 2030 and 2050 as reference dates: the 20-40-80 path and the 20-55-95 path (Figure 1).
The problem is twofold: these two trajectories are visibly challenged as early as 2020; the trajectory described by the Green Deal is the least credible. This does not mean that it is unrealistic to aim for carbon neutrality by 2050 (this is a necessity dictated by climate science), but this ambition, possibly enshrined in European law next spring, will be credible only on the condition of initiating a fundamental reflection beforehand on the reasons for the gap between achievements and ambitions, before considering increasing it further. New policies are needed if only to achieve old objectives.

From this point of view, there is a logical contradiction in the “Green Deal” project which proposes to adopt new climate objectives in March 2020 but postpones to June 2021 the “review” and possible “revision” of “all relevant climate-related policy instruments”. It is all the more necessary to begin now since revising European climate instruments to align them with climate science inspired objectives is going to be a complex process that will face swift opposition by well-known reluctant member states such as Poland. The need to begin this review without delay has indeed been put forward by the European Parliament in its resolution on the Green Deal released on 14 January 2020.4

**Recommendation:** Begin now a review of the complementarity and the adequacy to current objectives of EU’s climate mitigation instruments (regulations, EU ETS, carbon taxation), revise them if necessary and then set the new EU climate targets.
2. Decoupling: what from what?

Decoupling is an old concept in environmental economics. Decoupling occurs when the growth rate of a pressure on the environment (e.g. CO2 emissions) becomes lower than that of its driving force (e.g. GDP growth). There is absolute decoupling if the pressure on the environment (the volume of CO2 emissions) remains stable or decreases while the variable measuring the driving force increases (GDP growth in volume). Relative decoupling occurs when the pressure on the environment increases but at a lower growth rate than that of the driving force (GDP growth rate being greater than the growth rate of emissions).

The Green Deal project exhibits the ambition to increase the EU’s GDP while reducing greenhouse gas emissions. The text is not explicit in this regard, but it aims at an absolute decoupling between greenhouse gas emissions and GDP, which is not unrealistic in view of the trend observed in the recent period at the national level for a certain number of countries of the EU as for the EU as a whole (Laurent, 2011). In this latter regard, the authors are right to note that “between 1990 and 2018” the region “reduced greenhouse gas emissions by 23%, while the economy grew by 61%”.

However, two important questions are avoided here, corresponding to the relevance of the two decoupling indicators used, GHG emissions in production and GDP: Is this a genuine decoupling? Is it desirable decoupling?

The first question relates to the accountability of emissions. The Green Deal accounting, faithful to norms in force at the United Nations since the Kyoto Protocol, is based on production or territorial emissions (those that take place within European borders). But this is only part of the problem (On this point, see Paul Malliet, 2020). The text returns several times to the global dimension of the fight against climate change (going so far as to propose a carbon tax at the EU borders, which would be at odds with the cooperation spirit of the Paris Agreement which the text supports), but the authors fail to point out that the region contributes indirectly to climate change through its consumption emissions. A simple calculation allows to grasp the

Figure 2. EU production and consumption emissions in million tonnes of carbon per year, 1990-2017

Data source: Global Carbon Project.
importance of this contribution. The available data indeed show that when the transfer of emissions is added to production emissions, the reduction in emissions between 1990 and 2017 for the EU is no more of 21%, based on the production emissions, but of 5% (Figure 2). To put it differently, taking into account consumption emissions takes out 75% of the EU climate performance.

To illustrate that gap, accounting in terms of consumption emissions brings the EU closer to the United States in terms of global climate responsibility, while historical responsibility accounting (from 1870 to 2018) continues to place the EU in second place among global emitters (Table 1). 7

It is to be noted that the “Clean Planet for all” 8 communication reports much less distance between consumption and production emissions for the period 1996-2016. 9

The second question raised by this decoupling strategy is its desirability, that is the relevance of GDP as an indicator to be decoupled from greenhouse gas emissions, given the flaws and shortcomings of GDP with respect to the measurement of human well-being (see below, section 4).

**Recommendation:** Aim for a decoupling net of offshored pollution by taking consumption emissions as a reference and promote on this basis and other equity criteria a new global collective climate justice strategy – understood as the fair distribution of mitigation efforts – with a view to giving substance to the Paris Agreement (2015) when it is revised at COP 26 in Glasgow in November 2020.

### Table 1. Share in % of global emissions (MtC) for each country or region (responsibility in terms of emissions per capita is calculated in percentage of the world average)

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<tbody>
<tr>
<td>United States</td>
<td>15</td>
<td>345</td>
<td>16</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>China</td>
<td>28</td>
<td>145</td>
<td>24</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>European Union</td>
<td>9</td>
<td>139</td>
<td>12</td>
<td>22</td>
<td>14</td>
</tr>
<tr>
<td>India</td>
<td>7</td>
<td>41</td>
<td>6</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Russia</td>
<td>5</td>
<td>243</td>
<td>4</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Japan</td>
<td>3</td>
<td>189</td>
<td>3</td>
<td>4</td>
<td>4</td>
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</tbody>
</table>

Source: Global Carbon Project.

3. Resource efficiency and circular economy: beware of illusions

The Green Deal intends to widen this ambition of decoupling by aiming at the improvement of material or resource efficiency (or productivity) in the region (the decoupling between economic growth and the consumption of all natural resources, “economic growth decoupled from resource use”). This additional material efficiency would be made possible, in particular, by the development of the circular economy on the continent. There are also some conceptual and empirical pitfalls to be avoided in this area.
Eurostat, the European statistical agency, has been working for some time on developing material efficiency indicators. The lead indicator, called “Resource productivity”, divides the gross domestic product (GDP) by domestic material consumption (DMC), DMC being defined as “the annual quantity of raw materials extracted from the domestic territory of the local economy, plus all physical imports minus all physical exports”.

It can thus be shown that, between 2000 and 2018, the DMC of the European Union has decreased by about 7% while the GDP has increased by about 30%, so that resource productivity has increased by “around 40%” according to Eurostat. This dynamic is certainly encouraging, but it also reveals that three-quarters of the increase in material efficiency is due to GDP growth and not to the fall in the consumption of natural resources. Furthermore, the relatively minor decrease in DMC was almost entirely due to the great recession of 2009 (DMC has increased by close to 7% from 2000 to 2008, then fell by 12% between 2008 and 2009 and barely budged from 2009 to 2018).

What is more, the material footprint indicator (Wiedmann et al., 2015), which includes indirect flows (the natural resources incorporated into manufactured goods) in the calculation of natural resource consumption, calls into question this virtuous dynamic. The European ecological footprint has actually only grown since 1990. Since 2000, there has been no absolute decoupling between GDP and consumption of natural resources, but on the contrary a re-coupling: the material footprint is actually growing faster than GDP from 2002 onwards.

The question of the perimeter to be considered for measuring and reducing the European ecological footprint is therefore a central question. While the European Union’s trade balance in monetary values is slightly in surplus, its physical trade balance is strongly in deficit: the EU imports about three times more goods (measured by their weight and not their monetary value), than it exports (physical imports amount to 3-4 tonnes per capita while physical exports are around 1 tonne per capita in the EU in 2017). This deficit in physical or material trade reveals a structural and growing dependence of the EU, in particular with regard to metallic ores and fossil fuels (Table 2). Continental Europe is also the largest importing region of virtual water (it imports around 30% of the world’s virtual water in circulation).

The Green Deal therefore lacks an in-depth reflection on the global impact and the ecological dependence of the EU, which has only grown stronger in the past two decades.

It also lacks an update on thinking about the circular economy, which is now called into question by numerous academic works (Korhonen et al., 2018). Dominique Bourg and Christian Arnspenger (2016) for instance distinguish three levels of circularity by

| Table 2. Import dependency by main material category for the EU-28, 2000-2017 (% of EU imports in total materials made available to EU-28 economy) |
|---|---|---|
| Biomass | 8.6 | 10.5 | 10.7 |
| Metal ores | 62.4 | 68.5 | 54.4 |
| Non metallic minerals | 2.1 | 2.5 | 2.7 |
| Fossil energy materials | 48.1 | 56.6 | 63.8 |
| Total | 18.5 | 20.7 | 23.2 |

Source: Eurostat.

10. Eurostat itself acknowledges that “DMC does not include upstream flows related to imports and exports of raw materials and products originating outside of the local economy”.


order of genuineness. The first level of circular economy, consensual today, is that of production sites, but without a systemic vision of global flows. The second focuses on global material flows by advocating that the annual growth rate of material consumption should not exceed 0.5% to 1%. On this condition, part of the economy can be made circular. The third level, “the permacircular economy”, considers the return to growth of 0.5% per year as a first step, but essentially aims to reduce the material flows that underlie our economic activities but also degrade the biosphere and threaten human well-being. It should be noted that the circularity rate in the EU (the contribution of recycled materials to total demand) increased only slightly from 2004 to 2016, from 8% to 12%.

Finally, the European Commission states that it: “will explore measures to ensure that digital technologies such as artificial intelligence, 5G, cloud and edge computing and the internet of things can accelerate and maximise the impact of policies to deal with climate change and protect the environment.” However, this lenient view overlooks the fact that an increasing number of publications show how large and growing the ecological footprint of digital transition is, bringing about an acceleration in the consumption of material and transport flows.

**Recommendation:** Aim for a reduction in the consumption of natural resources taking into account the global material footprint of the European Union and start now a reflection on the compatibility between this reduction in volumes consumed and extracted and the acceleration of the digital transition on the continent.

4. What indicators should govern the European project?

The Green Deal is, in the eyes of the European Commission, above all a growth strategy. But what growth is it? The text refers to “sustainable and inclusive growth” but without making known on which indicators this ambition could be based. If, for lack of an alternative proposal in the text, GDP is chosen as a growth indicator (a sensible choice), we have known for a long time that GDP is unable, by design, to measure inequalities or environmental degradations. This fundamental limit calls for alternative indicators to sustain the Green Deal.

Similarly, the text remains imprecise on the consistency of the indicators that should guide the new European strategy and on their articulation with the existing indicators of European economic governance. What to do with the Stability and Growth Pact and the European Semester? How to make the Green Deal, the United Nations Sustainable Development Goals and the Stability Pact compatible?

The European Commission says in this regard that “The Green Deal is an integral part of this Commission’s strategy to implement the United Nation’s 2030 Agenda and the sustainable development goals” and that it “will refocus the European Semester process of macroeconomic coordination to integrate the United Nations’ sustainable development goals, to put sustainability and the well-being of citizens at the centre of economic policy, and the sustainable development goals at the heart of the EU’s policy-making and action”.

These are laudable intentions, but there is still considerable uncertainty as to the method chosen to arbitrate between indicators which, as they stand, are not compatible. In addition, the European Commission does not have the political legitimacy to arbitrate between the various indicators which must govern European project over the next decade. Yet, conflicts and trade-offs exist and must be sorted out.
Indeed, in its state and outlook of the European environment\textsuperscript{11}, published exactly one week before the Green Deal, the European Environmental Agency notes that the EU will not achieve its sustainable vision of living well within the limits of our planet by “continuing to promote economic growth”.

**Recommendation:** Define as a reference for the decoupling promoted by the “Green Deal” a set of indicators of human well-being rather than GDP alone and entrust the European Parliament with the responsibility of rethinking the European semester by defining the dimensions of European well-being should be given priority, the corresponding indicators and their articulation with the United Nations Sustainable Development Goals and the Stability and Growth Deal.

### 5. Rethinking the just transition

While relegating the ambition of social justice behind the pursuit of economic growth, the Green Deal project takes up the now widely accepted idea that the ecological transition which it proposes to accelerate must be just and considers in this perspective the creation a “Mechanism for a just transition”, intended to help “companies” to adapt to greener production methods. The European Commission announced on 14 January 2020 that the “Just Transition Mechanism (JTM)... provides targeted support to help mobilise at least €100 billion over the period 2021-2027 in the most affected regions, to alleviate the socio-economic impact of the transition”.

To begin with, financial aid systems for the reconversion of fossil industries already exist, but above all the project misses a really substantial definition of what could be a just transition for people (and not companies), and in particular the issue of justice and environmental inequalities, a typology of which is given in Table 3 which outlines a whole field of public policies for the European Union in the next decade, with a view to building a social-ecological state (Laurent, 2020) capable of reconciling its two essential vocations in the 21\textsuperscript{st} century (Table 3).

#### Table 3. Outlining environmental inequalities

<table>
<thead>
<tr>
<th>Philosophical approach</th>
<th>Generative fact</th>
<th>Inequality vector</th>
<th>Inequality criterion</th>
<th>Example of environmental inequality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural justice</td>
<td>Impact of individuals and groups on environmental policies</td>
<td>Exclusion from public decision-making procedures</td>
<td>Age, socio-economic level (income, health, education, etc.), spatial location, nationality, ethnic characteristics, etc.</td>
<td>Non-participation in the decision to install a toxic site (for example a chemical plant) in the city of residence</td>
</tr>
<tr>
<td>Recognitive justice</td>
<td>Impact of environmental policies on individuals and groups</td>
<td>Taxation, regulatory policies, information/awareness</td>
<td>Vertical and horizontal income inequalities caused by carbon taxation</td>
<td>Vertical and horizontal income inequalities caused by carbon taxation</td>
</tr>
<tr>
<td>Distributive justice</td>
<td>Exposure / sensitivity to damage and access to resources</td>
<td>Pollution, access to natural resources and environmental amenities</td>
<td>Unequal exposure and sensitivity to fine particle pollution in urban areas</td>
<td>Unequal exposure and sensitivity to fine particle pollution in urban areas</td>
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<td></td>
<td>Impact of individuals and groups on nuisance and damage</td>
<td>Emissions of local and global pollution, consumption of natural resources</td>
<td>Carbon footprint of households in the top income deciles</td>
<td>Carbon footprint of households in the top income deciles</td>
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</table>

\textsuperscript{11} The European environment — state and outlook 2020 (SOER 2020).
Indeed, as the environmental awareness in the population increases and the ecological crises in the world worsen, the issue of environmental inequalities becomes more and more salient in the European Union. The European Environment Agency thus, for the first time in 2018 (EEA, 2018), proposed an inventory of these inequalities which emphasizes in particular that better harmonization of social and environmental policies and better local action are necessary in order to successfully address environmental justice issues.

For instance, while air quality is a major determinant of quality of life in the eyes of Europeans, air pollution is the greatest risk they face in terms of environmental health and inequalities in exposure and sensitivity are large between European localities. The same goes for access to energy, nutritious and healthy food or exposure to so-called "natural" risks such as climate change. The major issue of fuel poverty, which affects up to 125 million Europeans according to certain accounts, and its link with carbon taxation that the Green Deal promotes is the subject of a few lines devoid of any scope in the Commission communication.

Recommendation: Broaden the concept of “just transition” to define and implement a real strategy to combat environmental inequalities in the European Union, notably by drawing on the work of the European Environment Agency.

Conclusion

The Green Deal project is a welcome attempt to widen and strengthen the social and ecological purpose of the European Union. But this goal will only be achieved if this new strategy is not only ambitious, but above all relevant and consistent. The next few months should be devoted to this task.


To reference this document: